

Appl. No. 09/838,512
 Atty. Docket No. 8045M
 Amdt. dated 4/29/2004
 Reply to Office Action of 3/3/2004
 Customer No. 27752

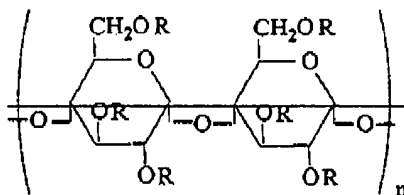
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A laundry and/or fabric care composition comprising:

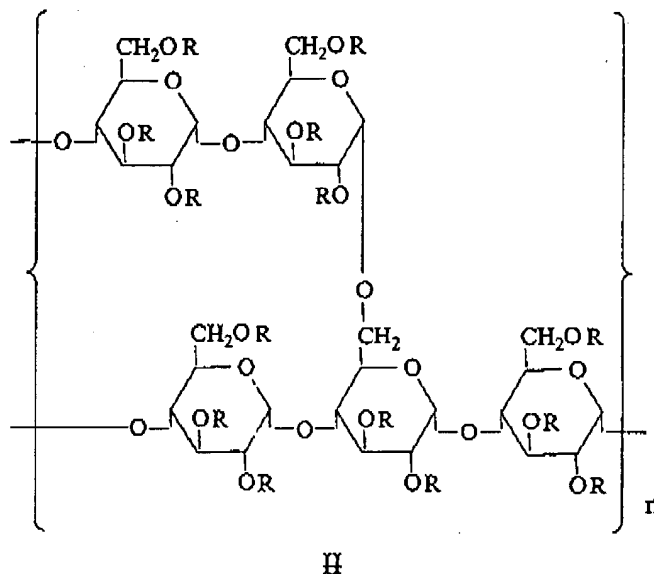
- a) from about 1% to about 80% by weight of surfactants selected from the group consisting of nonionic, anionic, cationic, amphoteric, zwitterionic surfactants, or mixtures thereof; and
- b) from about 0.1% to about 5.0% by weight of ~~a mixture of~~ modified amylopectin starch-based polymers and/or oligomers of the general ~~formulas, alone or in combination~~ formula:



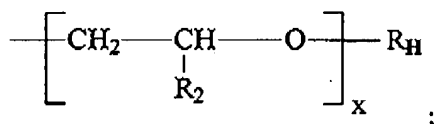
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or

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wherein each R is selected from the group consisting of R₂, R_C, and



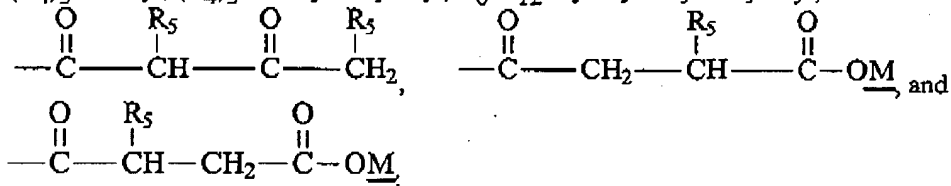
wherein:

- each R₂ is independently selected from the group consisting of H and C₁-C₄ alkyl;

- each R_C is $\text{---}(\text{CH}_2)_y\text{---}\overset{\text{O}}{\parallel}\text{C}\text{---}\underline{\text{OZ}}$,

wherein each Z is independently selected from the group consisting of M, R₂, R_C, and R_H;

- each R_H is independently selected from the group consisting of C₅-C₂₀ alkyl, C₅-C₇ cycloalkyl, C₇-C₂₀ alkylaryl, C₇-C₂₀ arylalkyl, substituted alkyl, hydroxyalkyl, C₁-C₂₀ alkoxy-2-hydroxyalkyl, C₇-C₂₀ alkylaryloxy-2-hydroxyalkyl, (R₄)₂N-alkyl, (R₄)₂N-2-hydroxyalkyl, (R₄)₃N-alkyl, (R₄)₃N-2-hydroxyalkyl, C₆-C₁₂ aryloxy-2-hydroxyalkyl,



- each R₄ is independently selected from the group consisting of H, C₁-C₂₀ alkyl, C₅-C₇ cycloalkyl, C₇-C₂₀ alkylaryl, C₇-C₂₀ arylalkyl, aminoalkyl, alkylaminoalkyl,

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dialkylaminoalkyl, piperidinoalkyl, morpholinoalkyl, cycloalkylaminoalkyl and hydroxyalkyl;

- each R₅ is independently selected from the group consisting of H, C₁-C₂₀ alkyl, C₅-C₇ cycloalkyl, C₇-C₂₀ alkylaryl, C₇-C₂₀ arylalkyl, substituted alkyl, hydroxyalkyl, (R₄)₂N-alkyl, and (R₄)₃N-alkyl;

wherein:

M is a suitable cation selected from the group consisting of Na^+ , K^+ , $1/2\text{Ca}^{2+}$, $1/2\text{Mg}^{2+}$, or $^+\text{NH}_j\text{R}_k$ wherein j and k are independently from 0 to 4 and wherein j + k is 4 and R in this formula is any moiety capable of forming a cation, preferably methyl and/or ethyl group or derivative;

each x is from 0 to about 5;

each y is from about 1 to about 5; and

provided that:

- the Degree of Substitution for group R_H is between about 0.001 and about 0.1, ~~more preferably between about 0.005 and about 0.05, and most preferably between about 0.01 and about 0.05;~~
- the Degree of Substitution for group R_C wherein Z is H or M is between about 0 and about 2.0, ~~more preferably between about 0.05 and about 1.0, and most preferably between about 0.1 and about 0.5;~~
- if any R_H bears a positive charge, it is balanced by a suitable anion; and
- two R_4 's on the same nitrogen can together form a ring structure selected from the group consisting of piperidine and morpholine.

2. (Original) The laundry and/or fabric care composition of claim 1, wherein each R_H is independently selected from the group consisting of C₅-C₂₀ alkyl, C₅-C₇ cycloalkyl, C₇-C₂₀ alkylaryl, C₇-C₂₀ arylalkyl, substituted alkyl, hydroxyalkyl, C₁-C₂₀ alkoxy-2-hydroxyalkyl, C₇-C₂₀ alkylaryloxy-2-hydroxyalkyl, (R₄)₂N-alkyl, (R₄)₂N-2-hydroxyalkyl, (R₄)₃N-alkyl, (R₄)₃N-2-hydroxyalkyl, and C₆-C₁₂ aryloxy-2-hydroxyalkyl.

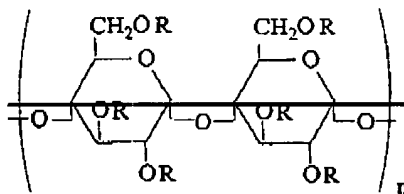
3. (Currently amended) The laundry and/or fabric care composition of claim 1, wherein each R_H is

independently selected from the group consisting of

$$\begin{array}{c} \text{O} \qquad \qquad \text{R}_5 \qquad \qquad \text{O} \\ \parallel \qquad \qquad | \qquad \qquad \parallel \\ -\text{C}-\text{CH}_2-\text{CH}-\text{C}-\text{OM} \end{array} \text{ and } \begin{array}{c} \text{O} \qquad \qquad \text{R}_5 \qquad \qquad \text{O} \\ \parallel \qquad \qquad | \qquad \qquad \parallel \\ -\text{C}-\text{CH}-\text{CH}_2-\text{C}-\text{OM} \end{array}$$

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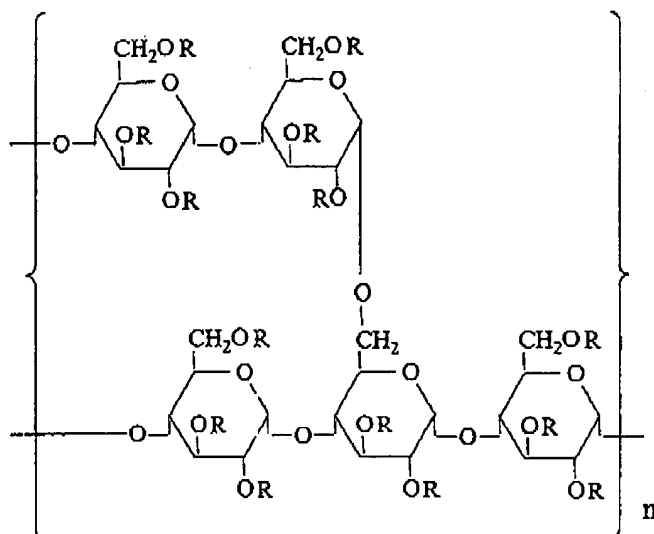
4. (Currently amended) The laundry and/or fabric care composition of claim 1, wherein the modified amylopectin starch-based polymer and/or oligomer has an average molecular weight of from about 5,000 to about 2,000,000.
5. (Currently amended) The laundry and/or fabric care composition of claim 1, wherein the modified amylopectin starch-based polymer and/or oligomer has an average molecular weight of from about 10,000 to about 1,000,000.
6. (Currently amended) A laundry additive composition comprising:
- a) from about 1% to about 80% by weight of water; and
 - b) from about 0.1% to about 80.0% by weight of modified amylopectin starch-based polymers and/or oligomers of the general formula formulas, alone or in combination:



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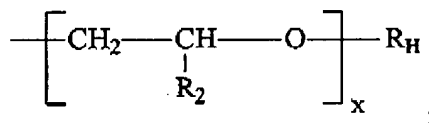
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wherein each R is selected from the group consisting of R₂, R_C, and



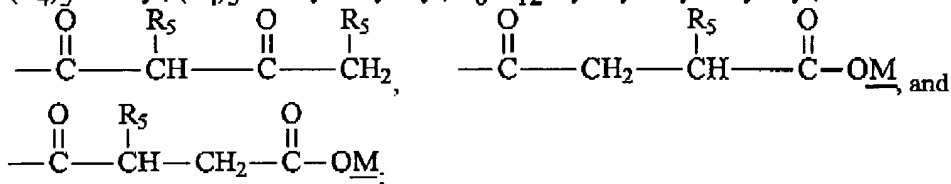
wherein:

- each R₂ is independently selected from the group consisting of H and C₁-C₄ alkyl;

- each R_C is $\text{---}(\text{CH}_2)_y\text{---}\overset{\text{O}}{\parallel}\text{C}\text{---}\text{O}\underline{\text{Z}}$,

wherein each Z is independently selected from the group consisting of M, R₂, R_C, and R_H;

- each R_H is independently selected from the group consisting of C₅-C₂₀ alkyl, C₅-C₇ cycloalkyl, C₇-C₂₀ alkylaryl, C₇-C₂₀ arylalkyl, substituted alkyl, hydroxyalkyl, C₁-C₂₀ alkoxy-2-hydroxyalkyl, C₇-C₂₀ alkylaryloxy-2-hydroxyalkyl, (R₄)₂N-alkyl, (R₄)₂N-2-hydroxyalkyl, (R₄)₃N-alkyl, (R₄)₃N-2-hydroxyalkyl, C₆-C₁₂ aryloxy-2-hydroxyalkyl,



- each R₄ is independently selected from the group consisting of H, C₁-C₂₀ alkyl, C₅-C₇ cycloalkyl, C₇-C₂₀ alkylaryl, C₇-C₂₀ arylalkyl, aminoalkyl, alkylaminoalkyl,

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dialkylaminoalkyl, piperidinoalkyl, morpholinoalkyl, cycloalkylaminoalkyl and hydroxyalkyl;

- each R_5 is independently selected from the group consisting of H, C_1-C_{20} alkyl, C_5-C_7 cycloalkyl, C_7-C_{20} alkylaryl, C_7-C_{20} arylalkyl, substituted alkyl, hydroxyalkyl, $(R_4)_2N$ -alkyl, and $(R_4)_3N$ -alkyl;

wherein:

M is a suitable cation selected from the group consisting of Na^+ , K^+ , $1/2Ca^{2+}$, $1/2Mg^{2+}$, or $^+NH_jR_k$ wherein j and k are independently from 0 to 4 and wherein j + k is 4 and R in this formula is any moiety capable of forming a cation, preferably methyl and/or ethyl group or derivative;

each x is from 0 to about 5;

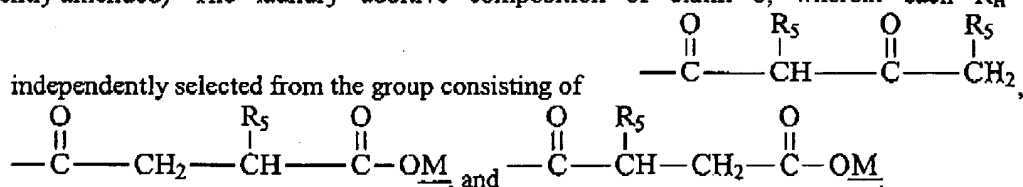
each y is from about 1 to about 5; and

provided that:

- the Degree of Substitution for group R_H is between about 0.001 and about 0.1, ~~more preferably between about 0.005 and about 0.05, and most preferably between about 0.01 and about 0.05;~~
- the Degree of Substitution for group R_C wherein Z is H or M is between about 0 and about 2.0, ~~more preferably between about 0.05 and about 1.0, and most preferably between about 0.1 and about 0.5;~~
- if any R_H bears a positive charge, it is balanced by a suitable anion; and
- two R_4 's on the same nitrogen can together form a ring structure selected from the group consisting of piperidine and morpholine.

7. (Original) The laundry additive composition of claim 6, wherein each R_H is independently selected from the group consisting of C_5-C_{20} alkyl, C_5-C_7 cycloalkyl, C_7-C_{20} alkylaryl, C_7-C_{20} arylalkyl, substituted alkyl, hydroxyalkyl, C_1-C_{20} alkoxy-2-hydroxyalkyl, C_7-C_{20} alkylaryloxy-2-hydroxyalkyl, $(R_4)_2N$ -alkyl, $(R_4)_2N$ -2-hydroxyalkyl, $(R_4)_3N$ -alkyl, $(R_4)_3N$ -2-hydroxyalkyl, and C_6-C_{12} aryloxy-2-hydroxyalkyl.

8. (Curently amended) The laundry additive composition of claim 6, wherein each R_H is



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9. (Currently amended) The laundry additive composition of claim 6, wherein the modified ~~starch-based~~ amylopectin polymer and/or oligomer has an average molecular weight of from about 5,000 to about 2,000,000.

10. (Currently amended) The laundry additive composition of claim 6, wherein the modified ~~starch-based~~ amylopectin polymer and/or oligomer has an average molecular weight of from about 10,000 to about 1,000,000.

11. (Original) The laundry additive composition of claim 1, wherein the Degree of Substitution for group R_H is between about 0.01 and 0.05.

12. (Original) The laundry additive composition of claim 1, wherein the Degree of Substitution for group R_C wherein Z is H or M is between about 0.4 and 0.7.

13. (Original) The laundry additive composition of claim 6, wherein the Degree of Substitution for group R_H is between about 0.01 and 0.05.

14. (Original) The laundry additive composition of claim 6, wherein the Degree of Substitution for group R_C wherein Z is H or M is between about 0.4 and 0.7.

15. (Currently amended) A method for treating a fabric in need of treatment comprising contacting the fabric with a modified ~~starch-based~~ amylopectin polymer and/or oligomer material according to Claim 1 such that the fabric is treated.

16. (Currently amended) The method according to Claim 15 wherein said ~~modified starch-based~~ polymer and/or oligomer material is selected from the group consisting of: amylose, amylopectin and mixtures thereof.

Claims 17-21 (Cancel)